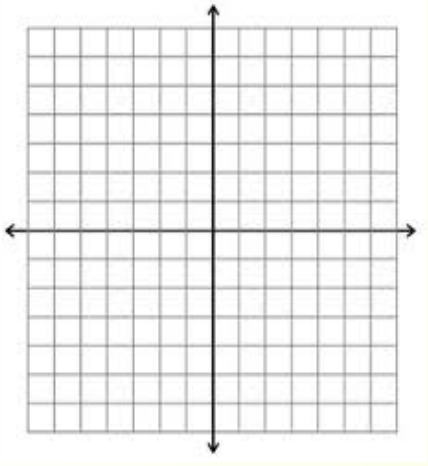
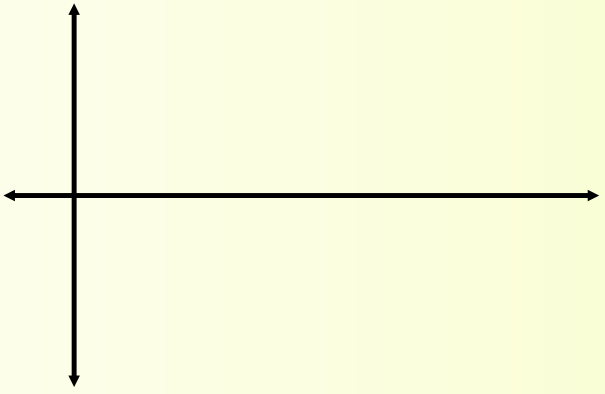
Alg. 2 Warm Up #12-3 Graph (no grapher):

1. $y = \log_2 x + 2$

x	y



2. $y = 3 \sin 2x + 1$



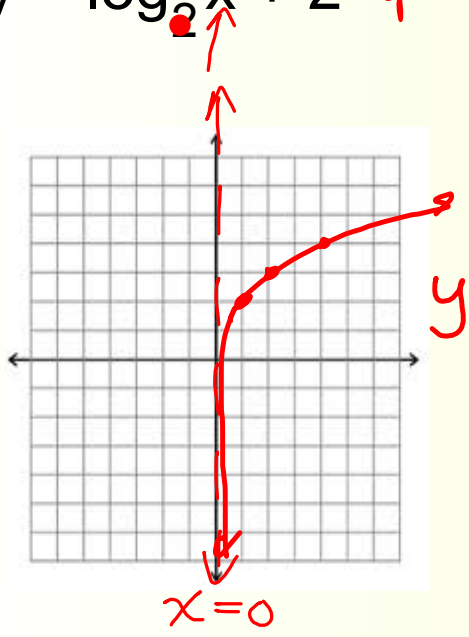
Alg. 2 Warm Up #12-3

Graph (no grapher):

1. $y = \log_2 x + 2$

x	y
1	2
2	3
4	4

up 2

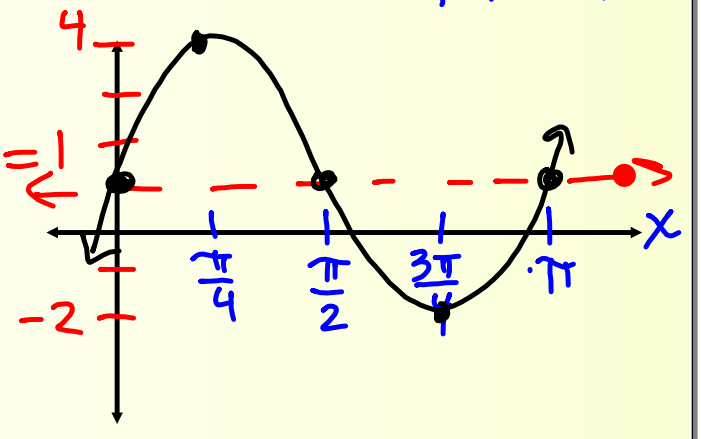


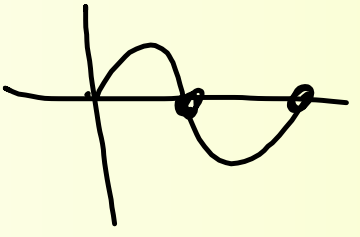
2. $y = 3 \sin 2x + 1$

Amp = 3

up 1

Per = π





HW Questions:

CL 7-168. Convert the following angles to radians.

a. 225° b. 75° c. –15° d. 330°

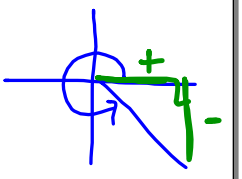
a) $\frac{225^\circ}{1} \cdot \frac{\pi \text{ radians}}{180^\circ}$

$\frac{225\pi}{180}$

$\frac{5\pi}{4}$

CL 7-169. Sketch each of the following angles in its own unit circle.

a. An angle that has a positive cosine and a negative sine.



b. All angles that have a sine of 0.5.

c. An angle that measures $\frac{4\pi}{3}$ radians. Find its exact sine.

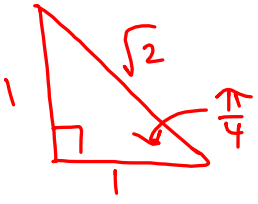
d. An angle with a negative cosine and a positive tangent.

CL 7-170. Without using a calculator, give the exact value of each expression.

a. $\sin 60°$ b. $\cos 180°$ c. $\tan 225°$

d. $\sin \frac{\pi}{4}$ e. $\cos \frac{2\pi}{3}$ f. $\tan \frac{3\pi}{2}$

look at the x coordinate on your unit circle.

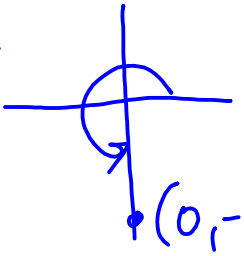


Sin → $\frac{opp}{hyp}$

$\sin \frac{\pi}{4} = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$

$\sin \frac{\pi}{4} = \frac{\sqrt{2}}{2}$

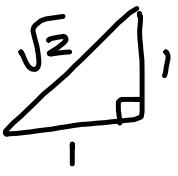
f.



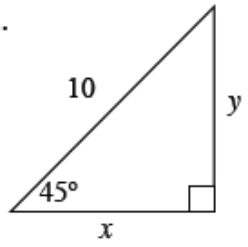
$\frac{-1}{0}$

CL 7-171. If an angle between 0 and 2π radians has a sine of –0.5, what is its cosine? How do you know?

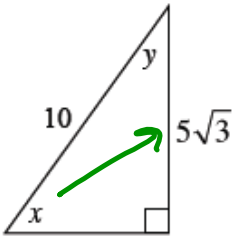
CL 7-172. Find the exact values of x and y in the drawings below.

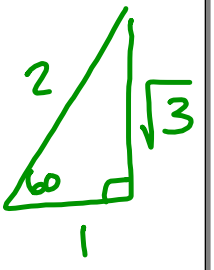


a.



b.





SOH

for a 45°-45°-90° △:

hyp = leg (√2) ←☆

$\frac{\sqrt{2}}{\sqrt{2}} \cdot \frac{10}{\sqrt{2}} = \frac{x(\sqrt{2})}{\sqrt{2}}$

$x = \frac{10\sqrt{2}}{2}$

$x = 5\sqrt{2}$

$x = \sin^{-1}\left(\frac{5\sqrt{3}}{10}\right)$

$x = \sin^{-1}\left(\frac{\sqrt{3}}{2}\right)$

$x = \frac{\pi}{3}$

hyp = 2 sh. leg

long leg = $\sqrt{3}$ sh leg.

CL 7-173. Rewrite each equation below in graphing form and sketch its graph. Then state the domain and range and whether or not it is a function.

a. $y = 3x^2 - 30x + 73$

b. $x^2 + y^2 - 6x + 4y + 4 = 0$

CL 7-174. Solve each equation to the nearest thousandth.

a. $2 \cdot 3^x = 40.8$

b. $3x^4 = 27$

c. $\log_5(2x+1) = 3$

d. $\log(x) + \log(2x) = 5$

$3^x = 20.4$

$\log 3^x = \log 20.4$

$x(\log 3) = \log 20.4$

$x = \frac{\log 20.4}{\log 3}$

$x \approx$

or:

$\log_3 20.4 = x$

$x = \frac{\log 20.4}{\log 3}$

$\log 2x^2 = 5$

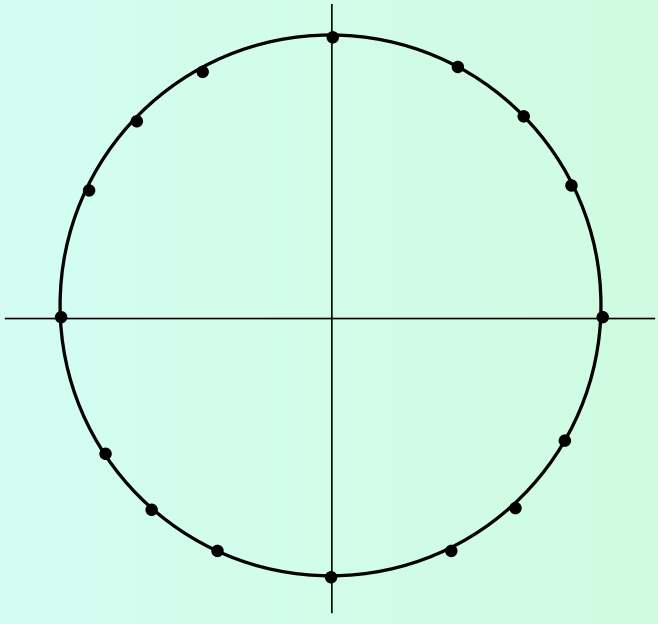
$10^5 = 2x^2$

CL 7-175. Find an equation for an exponential function that passes through the points $(1, 22)$, $(3, 20.125)$, and has a horizontal asymptote at $y = 20$.

$y = ab^x + 20$

Unit circle again!

Complete the pop quiz Special Triangles and Unit Circle with exact radian measures and coordinates.

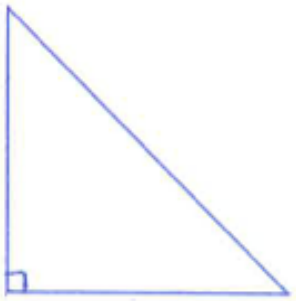


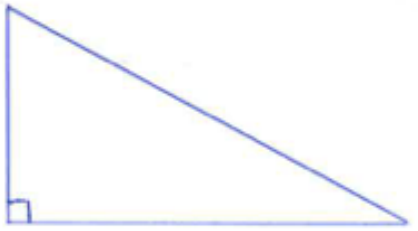
Compare triangles and unit circles in your team.

Carefully check accuracy!

Resolve any disagreements.

Fill in the radian measure of the acute angles in the special triangles, then label the sides given the hypotenuse = 1





State the trigonometric pythagorean identity:

_____

How do you use the unit circle to find the exact tangent of an angle?

$\tan\theta =$

HW: Review WS (Pink)

and review your unit circle!

Unit Circle Quiz:
tomorrow. No notes!

Test 7: Friday

(No calculator)